

CLAIMS

What is claimed is:

1. A method for determining a position of a mobile terminal tuned to a first control channel, comprising:

transmitting a paging request to the mobile terminal via the first control channel;

switching from the first control channel to a second control channel;

5 transmitting a paging response via the second control channel; and

determining the position of the mobile terminal based on the paging response.

2. The method of claim 1 wherein the first control channel is a packet control channel and the second control channel is a circuit-switched control channel.

3. The method of claim 2 wherein the first control channel is an Enhanced General Packet Radio Service 136 (EGPRS-136) control channel and the second control channel is a digital control channel.

4. The method of claim 1 further comprising:
transmitting, in response to the paging response, a release message via the second control channel;

receiving the release message; and
5 switching from the second control channel to the first control channel in response to the release message.

5. The method of claim 1 wherein the paging request is one of a hard page and a layer 3 page comprising a teleservice indication or Wide Open R-Data Transport indication.

6. The method of claim 1 wherein the determining the position of the mobile terminal based on the paging response comprises:

determining a cell in which the mobile terminal is positioned.

7. A system for determining a position of a mobile terminal tuned to a first control channel in a wireless communication network, comprising:

a memory that stores instructions; and

5 a processor that executes the instructions to send a paging request to the mobile terminal via the first control channel, the paging request indicating that the mobile terminal is to switch to a second control channel, receive a paging response from the mobile terminal via the second control channel, and determine the position of the mobile terminal based on the paging response.

8. The system of claim 7 wherein the first control channel is a packet control channel and the second control channel is a circuit-switched control channel.

9. The system of claim 7 wherein the paging request is one of a hard page and a layer 3 page indicting a circuit-switched service.

10. The system of claim 7 wherein, after receiving a paging response from the mobile terminal via the second control channel, the processor sends a release message to the mobile terminal, the release message indicating that the mobile terminal may switch back to the first control channel.

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11. The system of claim 7 wherein, when determining the position of the mobile terminal based on the paging response, the processor determines a cell sector in which the mobile terminal is located.

12. A computer-readable medium containing instructions for controlling at least one processor to perform a method for determining a position of a mobile terminal tuned to a first control channel, the method comprising:

- 5 sending a paging request to the mobile terminal via the first control channel, the
- 5 paging request indicating that the mobile terminal is to switch to a second control channel;
- receiving a paging response from the mobile terminal via the second control channel; and
- determining the position of the mobile terminal based on the paging response.

13. The computer-readable medium of claim 12 wherein the first control channel is a packet control channel and the second control channel is a circuit-switched control channel.

14. The computer-readable medium of claim 12 wherein the paging request is one of a hard page and a layer 3 page comprising a teleservice indication or Wide Open R-Data Transport indication.

15. The computer-readable medium of claim 12 wherein the method further comprises:

- 5 sending, after receiving a paging response from the mobile terminal via the second control channel, a release message to the mobile terminal, the release message indicating
- 5 that the mobile terminal may switch back to the first control channel.

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16. A method for determining a position of a mobile terminal tuned to a first control channel, comprising:

transmitting a paging request to the mobile terminal via the first control channel;

switching from the first control channel to a second control channel;

5 receiving a paging response via the second control channel from the mobile terminal;

transmitting a position request to the mobile terminal;

receiving a position response from the mobile terminal; and

determining the position of the mobile terminal based on the position response.

17. The method of claim 16 wherein the first control channel is a packet control channel and the second control channel is a circuit-switched control channel.

18. The method of claim 16 wherein the paging request is a layer 3 page comprising a teleservice indication or a Wide Open R-Data Transport indication.

19. The method of claim 16 further comprising:
assigning, in response to receiving the paging response, one of a control channel and a traffic channel, and

5 wherein the transmitting a position request to the mobile terminal occurs via the assigned channel.

20. The method of claim 16 further comprising:
transmitting a release message after receiving the position response.

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21. The method of claim 16 wherein the determining the position of the mobile terminal based on the position response comprises:

determining a cell sector in which the mobile terminal is located.

22. A system for determining a position of a mobile terminal tuned to a first control channel in a wireless communication network, comprising:

a memory that stores instructions; and

5 a processor that executes the instructions to send a paging request to the mobile terminal via the first control channel, the paging request indicating that the mobile terminal is to switch to a second control channel, receive a paging response from the mobile terminal via the second control channel, transmit a position request to the mobile terminal, receive a position response, and determine the position of the mobile terminal based on the position response.

23. The system of claim 22 wherein the first control channel is a packet control channel and the second control channel is a circuit-switched control channel.

24. The system of claim 22 wherein the paging request is a layer 3 page indicating a circuit-switched service.

25. The system of claim 22 wherein, in response to receiving the paging response, the processor assigns one of a control channel and a traffic channel, and

wherein, when transmitting a position request to the mobile terminal, the processor transmits the position response via the assigned channel.

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26. The system of claim 22 wherein, when determining the position of the mobile terminal based on the position response, the processor determines a cell in which the mobile terminal is located.

27. A computer-readable medium containing instructions for controlling at least one processor to perform a method for determining a position of a mobile terminal tuned to a first control channel, the method comprising:

transmitting a paging request to the mobile terminal via the first control channel;
receiving a response to the paging request via a second control channel;
transmitting a position request to the mobile terminal;
receiving a position response; and
determining the position of the mobile terminal based on the position response.

28. The computer-readable medium of claim 27 wherein the first control channel is a packet control channel and the second control channel is a circuit-switched control channel.

29. The computer-readable medium of claim 27 wherein the paging request is a layer 3 page comprising a teleservice indication or Wide Open R-Data Transport indication.

30. The computer-readable medium of claim 27 wherein the method further comprises:

assigning, in response to receiving the paging response, one of a control channel and a traffic channel, and

wherein the transmitting a position request to the mobile terminal occurs via the assigned channel.

31. The computer-readable medium of claim 27 wherein the determining the position of the mobile terminal based on the position response comprises:

determining a cell sector in which the mobile terminal is located.

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